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EXPLANATORY NOTES.

Column 4.—Show total area, then pot-kharáb, and then the difference, which is the total assessed area—V. F. No. I, columns 4, 5, 14, Manual of Revenue Accounts.

In mixed numbers; *e.g.*, numbers assessed partly as rice or garden and partly as dry-crop, show area and assessment in detail for each class of land—V. F. No. I, columns 7-12.

Column 5.—Write below figure of assessment "Original" or "Revision Survey" as the case may be.

In case of land paying only a quit-rent, show *full* assessment—V. F. No. I, column 15.

Columns 6, 7.—Show whether by well, canal, tank or channel. If water-rate is fixed and shown in V. F. No. I, column 13, enter in column 7. If charge is made by Irrigation Department, leave column 7 blank and show in column 6. If land is irrigated but no special rate levied, show reasons in column 6, *e.g.*, private well made since settlement.

Column 8.—Area not to be less than 8 gunthas in dry-crop or 4 gunthas in rice or garden. In special experiments the aggregate area of tests to be generally up to 5 per cent. of the holding.

Column 9.—Give the name according to column 2 of the list appended to V. F. No. 16, and the vernacular name of the variety.

When the area selected for experiment (column 8) contains more crops than one, show in column 9 all the crops and in report explain the nature of the mixture. If it consists of one crop with rows of a subordinate crop, find the proportionate area under each crop by counting the rows. If the seed of two or more crops was sown mixed, find the proportionate area by considering the seed sown. Cases will occur where both means of ascertaining the proportionate area must be used.

Divide the area of column 8 among the ingredients of the mixture and show the division in column 9.

Column 10.—Here enter in order of rotation crops sown in previous years, *e.g.*, 1 wheat, 2 jowári, and 3 gram. The figures 1, 2, 3 means 1st, 2nd and 3rd year. If in any year two crops are taken off the same piece of land, the two should be bracketed, thus 2 { (1) Rice }
(2) Wheat. }

If the rotation cannot be ascertained, write "undefined" and enter the crops as shown in V. F. No. 3 for the last three years in the manner above described. Where the rotation includes one or more years of fallow, show the customary fallows.

Column 12.—The estimate is to show the anna valuation of the crop as compared with former crops on the same field.

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Column 15.—Amount of manure per acre should generally be shown. By time of application is meant whether before or after sowing, as a top dressing.

Column 16.—If seed sown first in seed-bed and then seedlings transplanted, show proportionate area of seed-bed to acre of transplantation, and then calculate entry for the column.

Column 18.—Where weight ser and not measure ser customary, erase "measure" and substitute "weight."

Column 19.—Below entry of equivalent weight write 1 ser = tolas, *viz.*, the result of the actual test on which the entry is calculated.

Column 20.—Useful, that is useful as fodder or saleable for other purposes.

Columns 21-22.—Experimenters are not authorized to accept the prices recorded in the "Prices current" published in the *Government Gazette* for the purposes of entering the money value of the crop, but should ascertain it at the market town, which should also be the usual market of the produce. The value obtaining on the date of experiment, with the name of the market town at which it was ascertained, should be shown in these columns, and for purposes of check show the market rates both for principal and by-products in lbs. per rupee on which valuations are made. If fodder is sold in bundles, &c., find by test average weight of bundle, give price per 100 bundles, and calculate and show also price in lbs. per rupee.

Column 26.—See note on columns 6 and 7. The average assessment per acre should be calculated on the class of land dealt with in the experiment. Fluctuating canal-rates, sometimes levied according to the season for which water is taken, and sometimes according to the crop raised and calculated at rates liable to be modified from time to time, should not be considered as forming part of the standard assessment, but should be shown in column 6, as stated above.

Column 27.—Show to two places of decimals, not in rupees, annas, and pies.

Special Bombay Rules for the preparation of a Quinquennial Return showing the average outturn per acre of principal crops.

	Remarks.
I.—The number of crop experiments carried out by each Sub-Divisional Officer will be three ordinary or one special.	The number now prescribed is two ordinary or one special.
II.—Divisional Inspectors, Land Records and Agriculture, will perform the same number of experiments.	These officers are directed to make experiments by Departmental Orders, but they should be brought under the general scheme.

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| <p>III.—The Superintendent of Farms and the Superintendents of Local Government Farms will report experiments made on the farms or elsewhere under orders of the Director, Land Records and Agriculture.</p> <p>IV.—The direction of crop experiments will vest in the Director of Land Records and Agriculture in consultation with Collectors, and they will be carried out to meet as far as possible the requirements of the return.</p> <p>V.—The Director of Land Records and Agriculture will revise the averages quinquennially on the basis of results obtained from experiments to date. The figures of the return will follow the formulæ till the basis for this revision has been finally ascertained. The figures so revised will be printed in red ink.</p> | <p>The cultivation records are of course already kept up on the farms, but are not reported in the experimental farm.</p> <p>This provision is already made in Government Resolution No. 2823, dated 13th April 1889.</p> <p>The ledgering of experimental results is already carried out in the Director's office.</p> |
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Report of the Director of Land Records and Agriculture under paragraph 6 of Government of India letter No. 3-45, dated 20th February 1892 (Revenue and Agricultural Department).

The crops proposed for each district are those shown in the provisional statements attached to this office letter to Government, No. 1237, dated 27th May 1892.

2. It may be possible eventually to distinguish between crops grown on 1st, 2nd and 3rd class soil; for the present only the district average can be shown.

3. The provisional form of return shows outturn in *each* district and not for Representative Districts as implied in paragraph 1 of the Government of India letter. In the Bombay Presidency proper, it is not necessary or desirable to make any limitation as the formulæ and crop experiments alike extend to every district.

4. Mixed crops will in no case be returned as such. Both under the Revenue Manual and in Crop Experiments the several components of such crops are dealt with separately.

5. The form proposed is generally suitable as it stands.

(G. I., R. & A., No. 37—26, dated 27th June 1893; *vide* G. R. No. 5665, dated 5th August 1893.)

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11. Collectors should take steps to have the programmes observed as strictly as the circumstances of the season will allow. Only in cases where special circumstances exist should any deviation be allowed.

Copies of the programmes of crop experiments, which are annually settled by the Director, in consultation with the Collectors, should be communicated to the Commissioners to enable them to exercise proper supervision over the operations allotted to each officer. The Director, to whom the reports are forwarded immediately on completion of the experiment, should, when necessary, call for further information or verification of details, and in the absence of other defects, results should not be excluded because they differ materially from formulæ, the accuracy of which has not yet been established.

(G. R. No. 3547, dated 15th May 1893.)

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PART VII.—AGRICULTURAL EXPERIMENTS.

1. The recommendations of the Statistical Conference regarding the system of carrying out, and reporting agricultural experiments were briefly:—

- (a) That agricultural experiments should be systematically prosecuted in every province where adequate machinery for the purpose exists, and that "areas should be set aside in every province for the trial of agricultural experiments with a view to obtaining scientifically accurate results," it being left to Local Governments, subject to the principles laid down by the Government of India, to decide whether such areas should be situated on estates under Government management or on experimental farms.
 - (b) That as it is important to obtain and exhibit comparative results, care should be taken that all conditions other than those appertaining to the novelty itself should be, so far as possible, identical on the two areas.
 - (c) That in the management of the experimental farms, undue stress should not be laid on financial results, no portion of the area being necessarily managed with the sole object of obtaining a net profit on the outlay, and that, therefore, to emphasize their character such farms should, in future, be termed "experimental" rather than "model" farms.
 - (d) That with a view to economy the area under experiment on each farm should be the smallest consistent with the object in view—that of obtaining trustworthy results.
 - (e) That reports on experimental farms should be strictly confined to a description of the working of the farms and to a clear and accurate account of the experiments made, excluding the discussion of all points requiring the orders of Government; and that the reports might most conveniently take the form of one progress report for each of the two main agricultural seasons of the year, supplemented by an annual report of a somewhat fuller character.
 - (f) That uniformity should, so far as possible, be observed in regard to farm returns and accounts.
2. The points on which the opinions of Local Governments and Administrations were specially desired were—(1) whether experimental farms should be the subject of a report after each of the principal harvests, supplemented by a full annual report; (2) what forms should be adopted to show the results of farming and experiments; and (3) how far the financial results of working should be taken as tests of success.
3. As to point (1) the Governor General in Council is led to the conclusion that one annual record

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is sufficient for submission to the Government of India, though there is no reason why the record should not be brought out in parts after each harvest, should the Local Government consider this arrangement desirable for provincial purposes. In accordance with the principles put forward by the Conference, the record of the experiments should be brief, concise and positive, and should not be complicated by the discussion of questions of a speculative or administrative character. The Government of India would prefer, therefore, that if no objection is offered to this course by the Governments and Administrations concerned, reports by officers connected with Agricultural Departments or Government farms should be distinctly divided into two sections, of which the first or main section containing the body of the report and dealing with the administration of the farms or questions requiring the orders of superior authority, should be submitted to the Local Government in the ordinary course, and the second or subordinate section, containing the bare record of experimental results, should, with a view to the early publication of statistical results, be forwarded directly by the Departmental Officer to the Government of India, to all Local Governments and to other Agricultural Departments, and should, at the same time, be made available to the public through Agricultural Papers, Government Gazettes, or by other means.

4. The opinions expressed by Local Governments indicate that it is difficult, or at any rate premature, to prescribe any definite forms in complete detail for the record of experiments. At the same time, in order that proper attention may be ensured to the principles laid down by the Calcutta Conference and approved by the Government of India, and with a view to secure an amount of uniformity sufficient to admit of the intelligible collation of results in the Central Office of the Revenue and Agricultural Department, it is desired that in framing the record of experiments the following rules may be observed:—

(1) The record should be termed the “Record of Experiments of the Experimental Farm in the ^{Province} _{Presidency} of (half) year ending .”

(2) The results of each experiment should be embodied in the record in a form of which the first column should invariably be headed “Object of Experiment.” In this column should appear such entries as these:—

“To test Swedish plough B pattern.”

“To test effects of selected cotton-seed.”

“To test value of gypsum as manure.”

(3) The second column should be headed “Point or Points in which treatment of experimental area differed from ordinary native treatment.” Examples of entries are:—“sugar-canes planted, 1 foot apart instead of 6 inches.”

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"X plough used three times instead of native plough ten times."

(4) The form should also contain three columns showing—

(a) Results obtained by ordinary native method in weight, value, &c., per acre, per hour, &c.

(b) Results obtained from experiments in weight, value, &c., per acre, per hour, &c.

(c) Percentage of difference per acre, per hour, &c.

(5) All statistics in the record of experiments should be given under English denominations of weights and measures. No vernacular terms should on any account be employed.

(6) The total area under experiment in all farms in each Presidency and Province must be shown.

5. The following are examples of the entries prescribed by Rules (2), (3) and (4):—

	Column 1.		Column a.	Column b.	Column c.
	Object of experiment.		Results, native method.	Result of experiment.	Percentage of difference.
1	To show result of adding gypsum to ordinary manure.	..	Net value profits 20 per acre.	Net value profits 25 per acre.	25 per cent. gain in profits.
2	To test X sugar mill.	..	Amount of cane juice extracted by native mill per hour 40 lbs.	Amount of juice extracted by X mill per hour 44 lbs.	10 per cent. gain in juice.

It is evident that in the columns (a), (b) and (c) results may be shown in more than one way: thus, in the case of field produce, the difference in outturn might be shown per acre without reference to the difference in cost of treatment; or again the difference in outturn of grain might be shown without reference to the outturn in straw. As a rule, however, it is desirable that whatever other results may be recorded, the column (c) should, if the calculation is not too troublesome, include the percentage of the loss or profit entailed in money per acre, per hour, &c. Thus in the second of the above examples the real value of the X mill cannot be gauged unless the cost of working it, as compared with the cost of working the native mill, be taken into account.

If there has been no comparative experiment, columns (a) and (c) must be left blank, but the Government of India desires to draw prominent attention to the second of the recommendations of the Conference cited above. The occasions on which columns (a) and (c) are left blank should be few.

6. The importance of stating the results of every experiment in the terms of a common unit must not be overlooked. Thus it is of little practical use to state that one method gave 2 maunds, 20 seers on $\frac{3}{4}$ th of a bigha, while another resulted in 3 maunds,

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2 seers on 2 acres. The general reader for whose information the record is to be published, however much he may be interested in the question, will not, as a rule, and indeed cannot be expected to take the trouble himself to reduce these statistics to an intelligible form. In the above example the results should in each case be shown as so much per acre.

7. The advantage of the above method of record may be exemplified by the following illustration. It is desired by the Government of India to collect the statistical evidence obtained each year in each province as to the advantage of modifying the native plough. If the percentage of outturn of profit per acre due to the use of English or American ploughs (including native ploughs modified on Western patterns) can be readily found in some one column of the record of every experimental farm throughout the country, it will be a matter of no difficulty to collate the results obtained in all parts of India and to deduce statistical evidence of a decisive character in favour of modifying the native plough or the reverse. The net or average advantage (or loss) can be expressed in a single line of figures.

8. The Government of India see no reason to change the views expressed in the previous Resolution on the question of finance. It is quite impossible that every experiment can be financially successful: on the contrary, the difficulty of procuring cheap labour on a Government farm, the improbability of initial success in introducing an untried implement or method under new conditions, before time has been given for the modifications necessary to bring it into accordance with those conditions, and the existence of unsuspected causes which may induce complete failure, render it impossible to expect a profit upon the purely experimental area. For this reason the Government of India desire that strict effect should be given to the views of the Conference that the experimental area should, if maintained at Government expense, be restricted within the narrowest limits, and that the results should be recorded in a manner which will ensure accurate information being presented in the forms employed. The Government of India cannot sympathize with any measures which involve the conduct of doubtful experiments entailing either lavish expenditure or a loose and vague record of results. For this reason they wish that the record of the experimental area should be kept entirely distinct from the report on model or demonstration farms. Upon these latter the positive results of experiments may be usefully tried with a view to financial profit, and discredit should attach to any financial failure upon them not justified by very exceptional or unforeseen causes, such as a draught, cattle-murrain, &c. Any continued failure should lead to their contraction or discontinuance. It is only on these conditions that the Government of India can believe in the utility of expending public money upon agricultural experiments. It was very distinctly pointed out in

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the Resolution of the Government of India No. $\frac{6}{340-50}$ G. of the 8th December 1881, that "agricultural improvements" must for a considerable time be looked upon as a subsidiary duty of Agricultural Departments, and while the Government of India admit that experiments in agriculture (as fully proved at Rothamstead and elsewhere) owe a great part of their value to the extent of the period over which they are tried, and should, for that reason, be taken in hand at an early date, it cannot approve of any large outlay upon them which must, however useful in its remote results, be immediately unremunerative.

(G. I., R. & A., No. 1431 A-77-4, dated 28th December 1885; *vide* G. R. No. 935, dated 4th February 1836.)

2. As many important experiments are totally unsusceptible of tabulation in the manner laid down in the Government of India's Circular Resolution No. 143 $\frac{1}{2}$ A-77-4, dated 28th December 1885, the Superintendents of Government Farms are allowed full discretion as to the manner in which they shall exhibit the results of experiments, but to the report describing in detail the objects and the progress of experiments, an abstract should be added, tabulating the results in the manner prescribed as far as possible, and cutting from the body of the report the results of experiments not susceptible of tabulation in a concise, brief and positive form. (G. R. No. 2520, dated 1st April 1886.)

3. The method of instituting a comparison between yields on the basis of 100 as shown in the appended paragraph 5 of the review by the Director of the Department of Agriculture and Commerce, North-Western Provinces and Oudh, of the report of the Cawnpore Experimental Farm for the *kharif* season of 1883, is a simple and convenient one, and may be adopted by Agricultural Departments whenever it is convenient:—

"5. The results from deep and shallow ploughing for cotton confirm those for last year, and show, though not perhaps to the extent that might have been expected, that the advantage of a moderately deep ploughing is even greater in a dry year like the last than in a year of ordinary rainfall. Taking 100 as the yield from two shallow ploughings, the proportions of the yield to that obtained by one ploughing at different depths have been as follows:—

	Year.	Shallow.	5-inch.	9-inch.
Farm	1882	100	114·8	107·6
Common cultivator ...	1883	100	118·1	113·9
	1883	100	112·3	112·8

(G. I., R. & A., No. 81-A., dated 4th July 1884; *vide* G. R. No. 5965, dated 23rd idem.)

4. The farm attached to the College of Science, Poona, should be transferred to the Agricultural Department. The Principal, College of Science

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Poona, will continue to be consulted only on such questions arising in the farm management as concern its educational functions, and on all such questions the Director of Land Records and Agriculture will be careful to regard the Principal's wishes. (G. R. No. 2190, dated 10th April 1888.*)

5. The Collectors should give a short account of any experiments in poudrette that may be made, in the annual report on the Administration of Municipalities within their districts. (G. R. No. 1037, dated 7th February 1891.)

6. Portions of the Agricultural Chemist's Inspection notes which discuss the results of any experiments carried out on experimental farms in the Bombay Presidency should be included in the annual reports on experimental farms. (G. I., R. & A., No. 234-88-4, dated 28th January 1899: *vide* G. R. No. 1455, dated 23rd February 1899.)

* It was stated in this Resolution that His Excellency the Governor had consented to the transfer of the old Botanical Gardens to the Agricultural Department, subject to the reservation that the gardens should preserve their present character and be open at all times to the occupants of the Government House, that the produce of the mango trees planted by the then administration should be reserved to Government House, and that the ornamental character of the gardens should not be interfered with if they were kept for grazing and grass-cutting and for ensilage experiments.

PART VIII.—AGRICULTURAL STATISTICS.

1. The Statistical Conference of 1883 recommended the adoption of an uniform scale of colours for the illustration of percentages in maps prepared for the representation of agricultural statistics. A scale was accordingly prescribed by the Government of India in their Resolution No. 27-16-3, dated 21st March 1885. This scale is a simple ascending scale, and will generally be employed in showing percentages above zero of rainfall, crops, irrigation, and the like, over different areas. The amount of difference in percentage to be indicated by the different colours in the scale is left to the discretion of the Local Governments and Administrations. The maps are to be coloured by hand, and to facilitate this, Local Governments and Administrations will be supplied by the Stationery Department, on indent, with small boxes containing colours in cakes corresponding exactly with the prescribed scale. It will probably be found convenient that as soon as a given scale of percentages is adopted, the percentage which each colour is to express should be clearly shown on a label fixed to the inside of every box.

Whenever statistical maps are sent for reproduction by lithography to the Surveyor-General's office, the course suggested in the following letter No 292 S., dated 25th January 1889, should be adopted. Whenever it is more convenient (as would be the case where a few copies are required) to have a map prepared in the Provincial offices, the colours laid down in the scale prescribed in the circular of the 21st March 1885 might continue to be used :—

“With reference to certain correspondence that took place in 1885 on the subject of a scale of colours for the illustration of statistical maps, I have the honour to point out the great saving of both time and expense in making use of different tints of the same colour, rather than a scale of different colours, for that purpose. It is quite possible to represent seven different shades, which in most cases is quite as many as are necessary; such a map printed in shades would pass only twice through the press, whilst, if seven different colours were used, it would necessitate eight pulls, or at least four, if three of the colours could be made by combination. Again, as regards the legibility of the map, I think there is no doubt as to the superiority of graduated shades of one colour, for the purpose of illustrating percentages, over the method of allotting a separate colour to each percentage. If this is acknowledged, I think it would be advisable to issue instructions to those who require such maps prepared to allot to each percentage a number, which number should be shown on the map in each district to which it refers. The table of references explaining the percentages should also be clearly given on the margin of the map. By this plan all hand-colouring and possibility of confusion between different colours is avoided.”

(G. I., R. & A., Nos. 27-16-3, dated 21st March 1885, and 14-63-2, dated 27th February 1889; *vide* G. Rs. Nos. 2956, dated 11th April 1885, and 2436, dated 28th March 1889.)

2. The errors and discrepancies occurring in the agricultural statistics submitted to the Government

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of India will be adjusted by them in direct communication with the officers charged with the preparation of the statements. (G. I., R. & A., No. 12-10-13, dated 9th February 1886; *vide* G. R. No. 20c2, dated 16th March 1886.)

3. For the purpose of Imperial compilation uniformity is indispensable. No modifications in the forms of the returns of agricultural statistics submitted to the Government of India which have not been specially authorized can therefore be permitted; and where deviations from the prescribed headings are unavoidable under existing circumstances, efforts should not be spared to gradually eliminate them. There is no objection to the amplification or modification of the forms for provincial purposes. On the contrary, it is most desirable that these returns should be utilised to the fullest extent in administration reports, the headings being expanded or re-arranged as may be necessary. By this measure the labour now devoted to the separate and independent compilation of statistical returns for provincial reports dealing with agricultural subjects will be minimised; the discrepancies which frequently exist between the two sets of returns and detract from the value of both will be obviated; and the examination and discussion to which the figures will be subjected in provincial reports will provide the Government of India with the materials, now wanting, for a review of the Imperial tables. The opportunity is at the same time taken to remind Local Governments and Administrations of the express desire of Her Majesty's Secretary of State, that the information in provincial reports and returns regarding crops and other agricultural matters should be as full and detailed as the means at disposal will allow.

Instructions for the compilation of the forms are given in the shape of foot-notes, but there are some points which call for supplementary remarks and are dealt with in the following paragraphs:—

Form A 2 (1).—Forests.—To provide for the case of lands legally declared to be forests or administered as forests under any legal enactments other than Forest Acts it has been necessary to enlarge the definition of the heading. Care should be taken that the areas of Government forest included in this return are obtained from the same source as the areas exhibited in the reports on forest administration.

Form A 2 (3).—Culturable waste other than fallow.—Owing to the extreme variations which have been found to exist in the period for which land is left fallow, the heading "Culturable waste other than fallow" has been substituted for that formerly proposed, *viz.*:—

"Culturable, but not cultivated for three years."

Form A 3 (1 to 30).—Details of Crops.—After careful consideration it has been decided to

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add *rdgi* or *mandva* (*Eleusine coracana*) to the new crop heading adopted on the recommendation of the Delhi Conference. This is as important a food-crop in Southern India as is barley in Northern India, and the Government of India desire that where the area cultivated with *rdgi* is not already recorded separately, the alterations necessary in the village returns of crops to secure these statistics may be introduced as soon as convenient. If, for reasons of real importance, the statistics of any crop included in the statement cannot be separately given, the corresponding column may be left blank, but the reasons for omission should be fully explained. Alterations in the standard crop headings of the Imperial return cannot, for the reasons already stated, be allowed, though the forms may be expanded or modified at the discretion of Local Governments for provincial purposes.

Form A 4.—Stock, &c.—The headings added in this return to those previously suggested are *young stock* and *camels*. *Pigs* have been omitted. Special importance is attached by the Government of India to the correct compilation of the information required for columns 1 to 5, which involve the separate classification of animals whose milk is valuable, and of young apart from adult stock.

The provincial returns are, with the following exceptions, due to the Government of India* on the 1st November of each year and should be punctually submitted by that date:—

	1st instalment on the 1st December.	2nd instalment on the 1st February.
Bombay	... Forms A, B and E	... Forms C and D.

No uniform period can be prescribed for the year to which the statistics should relate, but the Government of India desire that Forms A and B should be compiled for the recognized agricultural year of each province.

No general review of the statistics is required with the returns; but all differences in excess of 20 per cent. between the figures of the year of report and the previous year should be explained in an appendix to the tables in the form prescribed. Where general causes sufficiently account for differences, detailed explanations need not be given.

(G. I., R. & A., Nos. 19-20, dated 20th July 1891, 36-36, dated 29th July 1892, and 538-3, dated 15th February 1893; *vide* G. Rs. Nos. 5802, dated 25th August 1891; 7090, dated 6th September 1892 and 1639, dated 2nd March 1893.)

4. In compiling Form C of the Agricultural Statistical Returns, the Director of Land Records

* Under later instructions (*vide* G. I., R. & A., No. 15-52-6, dated 23rd May 1895; G. R. No. 4678, dated 21st June 1895) these returns are to be forwarded to the Director General of Statistics.

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and Agriculture should exclude the revenue on account of "fallows" from column 8 thereof. (G. R. No. 5173, dated 23rd June 1892.)

5. The returns of agricultural statistics for the Bombay Presidency should be submitted to Government in duplicate in the forms* prescribed by the Government of India in their letter No. 51-41, dated 17th October 1892. Should the number of columns provided in the form prove insufficient, they may be increased by the addition of fresh sheets; but in no case should the arrangement of the forms be altered. To facilitate the compilation of the Imperial returns the arrangement of districts, except in so far as they may be inevitably affected by territorial changes, should be the same in all the returns and in the returns of every year. Whenever further supplies of the printed forms are required by the Director of Land Records, an indent for them should be submitted through the Government of Bombay. (G. R. No. 8937, dated 12th November 1892.)

6. For the purposes of the returns of agricultural statistics the Director of Land Records and Agriculture should collect statistics differentiating between the various classes of irrigation. (G. I., R. & A., No. 3513-41, dated 12th December 1892; *vide* G. R. No. 1606, dated 1st March 1893.)

7. In Form A 1, column 2 (a), the area of Feudatory and Tributary States may be shown as returned for the General Administration Report of the Presidency. (G. R. No. 5785, dated 15th July 1892.)

8. There is no objection to the insertion in red ink between headings 2 (a) and 2 (b) in Form A 1 of figures showing the areas of British districts after excluding Native States of all kinds. (G. I., R. & A., No. 1418-8, dated 9th May 1893; *vide* G. R. No. 3932, dated 30th idem.)

* Not printed.

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PART IX.—AGRICULTURAL IMPLEMENTS.

1. Provincial Agricultural Departments are permitted to obtain the agricultural implements and machinery they require direct from the makers in England or America, provided that the consequent expenditure in each province does not exceed Rs. 4,000 and that the orders are confined to articles required for purely experimental purposes. (S. of S. No. 34, Finl., dated 19th June 1834; *vide* G. R. No. 6689, dated 19th August 1834.)

2. In order to facilitate the introduction of agricultural implements suitable to the agricultural circumstances of the country, it is desirable that there should be annually published a general list of agricultural implements which have in any province been found useful, or which can be recommended for trial by any Agricultural Department or institution in the country.

The list should be prepared for the year ending 30th September, and should be published as an Appendix to Chapter V (Scientific and Local Enquiry under Provincial direction) of the Annual Report of the Department of Lands Records and Agriculture.

On receipt of the provincial lists a combined statement will be prepared and published in the supplement to the *Gazette of India* and otherwise circulated. In any province in which an agricultural department has been organized, arrangements should be made to procure for experiment any implement which has been found satisfactory in any other part of India, provided that there is *prima facie* reason to believe that it is in any way adapted to the agricultural circumstances of the province. Any such implement should be included in the provincial list for the year in which the experimental trial is made, and the results of the trial should be entered in the column of remarks.

To ensure uniformity in the lists, the following points should be observed :—

(i) No implements in general use among native agriculturists should be entered otherwise than in the case of any exceptionally useful implement which is believed not to be in use in other parts of India.

(ii) Improved or patented implements already recommended, or of which the utility is already established (*e. g.*, the Behua Sugar Mill, the Kaisar Plough, &c., &c.) need not be entered, unless—

(1) they have undergone modification, or

(2) defects have been discovered, or

(3) they have been for the first time introduced into the province during the year under report, or

(4) their sale has considerably extended.

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In the last case the description of the implement need not be repeated.

- (iii) In case the materials for the provincial list are obtained from lists supplied by a number of officers, the provincial list should be carefully revised in accordance with the above instructions, all unnecessary implements being excluded; and where several reports have been received regarding any one implement, their general purport should be summarised.

Information should be particularly supplied respecting any implement which is received with favour by native farmers or cultivators, and as to the extent to which the use of the implement is gaining ground. The opinion of native agriculturists should, whenever possible, be quoted. (G. I., R. & A., Nos. 17-A., dated 15th May 1882, 70-A., dated 15th September 1883, 12-A.-9-2, dated 16th February 1889, 59-A.-9-28, dated 2nd October 1889, and 13-72-16, dated 3rd May 1899; *vide* G. Rs. Nos. 3646, dated 6th June 1882, 7674, dated 15th October 1883, 1893, dated 9th March 1889, 7420, dated 2nd October 1889, and 3797, dated 31st May 1899.)

3. The officers reporting should submit the lists to the Director of Agriculture, who should cause a general list for the whole Presidency to be compiled in his office from the district returns and embody it as an appendix to Chapter V of his Annual Report with any remarks which he may himself have to offer. (G. Rs. Nos. 7000, dated 29th August 1885, and 3797, dated 31st May 1899.)

PART X.—BOTANICAL SURVEY.

1. The following territorial division of India is prescribed for the purposes of botanical survey :—

Under the Superintendent, Royal Botanical Gardens, Calcutta.

The Province of Bengal.

„ Assam.

„ Burma.

The Andamans and Nicobars.

North-East Frontier Expeditions.

Under the Government Botanist, Madras.

The Presidency of Madras.

The State of Hyderabad.

The State of Mysore.

Under the Principal, College of Science, Poona.

The Presidency of Bombay, including Sind.

*Under the Director, Botanical Department,
Northern India.*

The North-Western Provinces and Oudh.

The Punjab.

The Central Provinces.

Central India.

Rájputána.

North-West Frontier Expeditions.

It is desirable that the Sibpur Institution should, without any interference with the Provincial control over the Royal Botanical Gardens, Calcutta, be officially recognized as the acknowledged centre of the Botanical Survey of India, and that to it should be referred the solution of all problems rising out of the practical or scientific study of Indian botany. In view of the important position which the Superintendent of the Royal Botanical Gardens, Calcutta, will thus occupy as the central authority in the Botanical Survey of India, the Government of India have, with the concurrence of the Secretary of State, added to the designation of the Superintendent the official title of "Director of the Botanical Survey of India." In all correspondence dealing with subjects relating to general botanical exploration, the latter title should be employed.

In the Bombay Presidency a herbarium exists at the College of Science, Poona, and a botanical collection is in course of formation at the Victoria Gardens, Bombay. The former place is to be the headquarters of botanical research and collections, and the existing herbarium there is to be developed.

(G. I., R. & A., No. 5-57-1-A, dated 26th February 1891; vide G. R. No. 1928, dated 16th March 1891.)

2. In order to bring under general review, for the information of the authorities at Kew, the progress made from year to year in the Botanical Survey of India, it is desirable that all botanical officers should annually communicate to the Director of the

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Botanical Survey of India a report summarizing the operations of the year, so far as these are concerned, with investigation, collection or publication of materials of a purely scientific character. As little delay as possible should occur in the transmission of the report to the Director, who will incorporate it with his own report to the Kew authorities. The most convenient date for the communication of the report will be the 1st July, the report covering the operations for the financial year ending on the 31st March previous.

2. The officer in charge of the Botanical Survey of the Bombay Presidency should prepare the necessary report as regards the Bombay Presidency and send it direct to the Director of the Botanical Survey of India, by the prescribed date, copies thereof being, at the same time, submitted to Government for information. (G. I., R. & A., No. 547-62, dated 11th March 1893; *vide* G. R. No. 2992, dated 27th April 1893.)

3. The Government of India place definitely upon the Director of the Botanical Survey of India the responsibility of guiding the survey, and after such consultation with the botanical officers in Madras, Bombay and Northern India and the authorities at Kew as he may deem expedient, of giving directions as to the general character of the explorations, the subjects which are to be taken up and the form in which results are to be published. The main object of his directions should be to secure the gradual completion of the Botanical Survey of India on a systematic plan, but no instructions should be issued which are likely to involve the interruption of the executive duties of the botanical officers without the consent of the Government to whose orders they are subject. A copy of all such instructions, as may be issued by the Director, should, at the same time, be communicated to the Government of India and to the Provincial Governments concerned for information.

Any proposals made by the Director of the Botanical Survey of India for the improvement or perfecting of the survey, which involve fresh expenditure, should be submitted to the Government of India for consideration. (G. I., R. & A., No. 18-30, dated 12th May 1893; *vide* G. R. No. 4265, dated 14th June 1893.)

4. All applications involving a pecuniary outlay which the heads of botanical establishments may desire to address to the authorities at Kew, should not be sent direct, but should be forwarded in the usual way through the India Office. (S. of S. No. 76, Rev., dated 31st October 1883; *vide* G. I., R. & A., No. 1031-146-1, dated 5th December 1883, and G. R. No. 9538, dated 26th *idem*.)

5. All demands on the Royal Gardens at Kew for botanical information or for seeds should be made through the Central Botanical Institutions at Calcutta, Madras and Bombay. (S. of S. No. 86, Rev., dated 3rd November 1887; *vide* G. R. No. 766, dated 2nd February 1888.)